UNDERWATER BRIDGE INSPECTION REPORT

STRUCTURE NO. 66523

MSAS 125 (HULET AVENUE)

OVER THE

CANNON RIVER

DISTRICT 6 - RICE COUNTY

PREPARED FOR THE

MINNESOTA DEPARTMENT OF TRANSPORTATION

BY

COLLINS ENGINEERS, INC.

JOB NO.5221

MINNESOTA DEPARTMENT OF TRANSPORTATION
UNDERWATER BRIDGE INSPECTION

REPORT SUMMARY:

The substructure units inspected below water at Bridge No. 66523, the North and South Abutments and Pier 1, were found to be in good condition with no defects of structural significance observed. A light accumulation of timber debris was observed at Pier 1, and the channel bottom appeared to be in stable condition at both piers with no notable scour present.

INSPECTION FINDINGS:

(A) Concrete of all units was in good and sound condition with no notable deterioration.

(B) A light accumulation of timber debris consisting of 1-foot-diamter and smaller logs and branches was observed on the channel bottom at the upstream end and along the northern downstream half of Pier 1.

RECOMMENDATIONS:

(A) Reinspect the submerged substructure units at the normal maximum recommended (NBIS) interval of five (5) years.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Daniel G. Stromberg

Date 6/30/2008 Registration No. 21491

Respectfully submitted,

COLLINS ENGINEERS, INC.

Daniel G. Stromberg
Registered Professional
Engineer, State of Minnesota

MINNESOTA DEPARTMENT OF TRANSPORTATION
UNDERWATER BRIDGE INSPECTION

1. BRIDGE DATA

Bridge Number: 66523

Feature Crossed: Cannon River

Feature Carried: MSAS 125 (Hulet Avenue)

Location: District 6 – Rice County

Bridge Description: The superstructure consists of three spans of multiple steel stringers supporting a reinforced concrete deck. The bridge is supported by two reinforced concrete abutments and one reinforced concrete pier.

2. INSPECTION DATA

Professional Engineer Diver: Daniel G. Stromberg
State of Minnesota, P.E., No. 21491

Dive Team: Clayton G. Brookins, Valerie Roustan

Date: October 23, 2007

Weather Conditions: Sunny, ± 56^{o} F

Underwater Visibility: ± 0.5 Feet

Waterway Velocity: ±1 f.p.s.

3. SUBSTRUCTURE INSPECTION DATA

Substructure Inspected: North and South Abutments and Pier 1.

General Shape: The pier consisted of an oblong rectangular pier shaft with rounded upstream and downstream ends. The abutments consisted of vertical concrete breastwalls. No footing information was available.

Maximum Water Depth at Substructure Inspected: Approximately 6.0 feet at Pier 1.

4. WATERLINE DATUM

Water Level Reference: The top of the pier cap at the upstream end of Pier 1.

Water Surface: The waterline was approximately 5.1 feet below reference. Waterline Elevation = 94.9.

5. NBIS CODING INFORMATION (Minnesota specific codes are used for 92B and 113)

Item 60: Substructure: Code 7

Item 61: Channel and Channel Protection: Code 7

Item 92B: Underwater Inspection: Code B/10/07

Item 113: Scour Critical Bridges: Code L/Unknown

Bridge is scour critical because abutment or pier foundation is rated as unstable due to observed scour at bridge site.

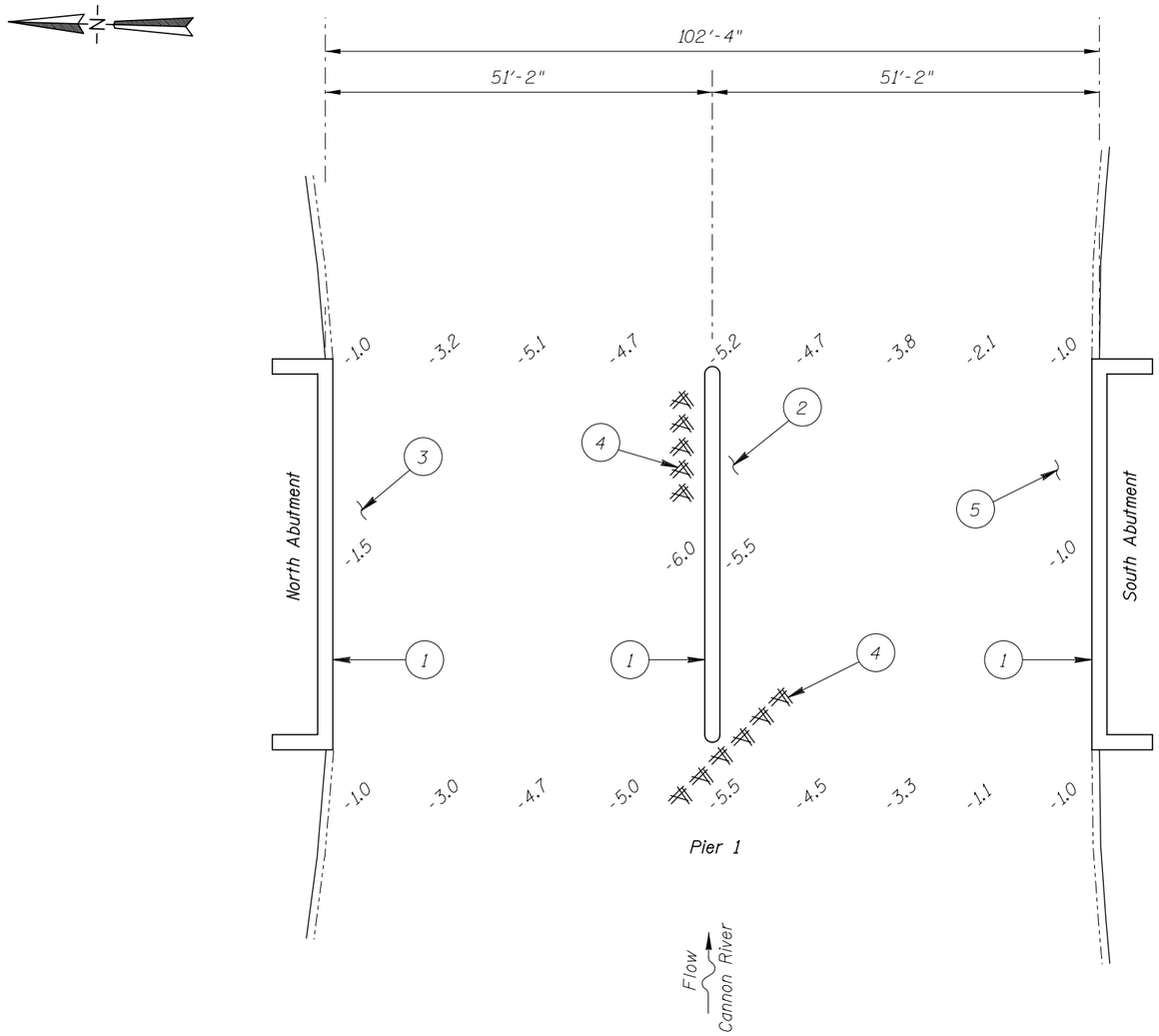
_____ Yes X No

Photograph 1. Overall View of Bridge, Looking Northeast.


Photograph 2. View of Pier 1, Looking Southeast.

Photograph 3. View of the North Abutment, Looking Northeast.

Photograph 4 View of the South Abutment, Looking Southeast.



SOUNDING PLAN

GENERAL NOTES:

1. The North and South Abutments and Pier 1 were inspected underwater.
2. At the time of inspection, on October 23, 2007, the waterline was located approximately 5.1 feet below the top pier cap of Pier 1 on the upstream end. Since insufficant bridge elevation information was available, a reference elevation of 100.0 was assumed. Based on the assumed reference, the waterline elevation was 94.9.
3. Soundings indicate the water depth at the time of inspection and are measured in feet.
4. Soundings were taken parallel to the bridge at 1/4 point intervals between the substructure units as well as around the pier structures.

INSPECTION NOTES:

1. The concrete was in smooth and sound condition with no notable deterioration.
2. The channel bottom at Pier 1 consisted of silty sand with scattered rock and up to 2 inches of probe rod penetration.
3. The channel bottom along the North Abutment consisted of 2-foot-diameter and smaller riprap.
4. A light accumulation of timber debris consisting of 1-foot-diameter and smaller logs and branches was observed on the channel bottom at the upstream nose and along the northern downstream half of Pier 1.
5. The channel bottom along the South Abutment consisted of 4-foot-diameter and smaller riprap.

Legend

-0.4	Sounding Depth (10/23/07)
	Timber Debris

MINNESOTA
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UNDERWATER BRIDGE INSPECTION

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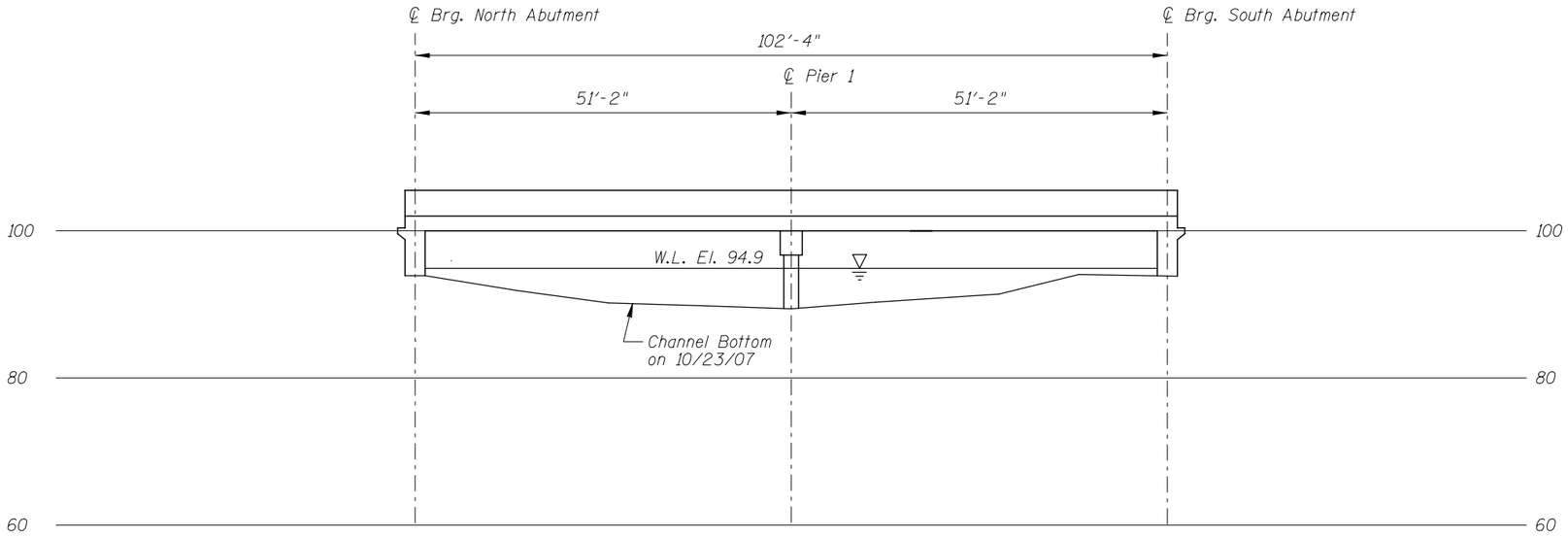
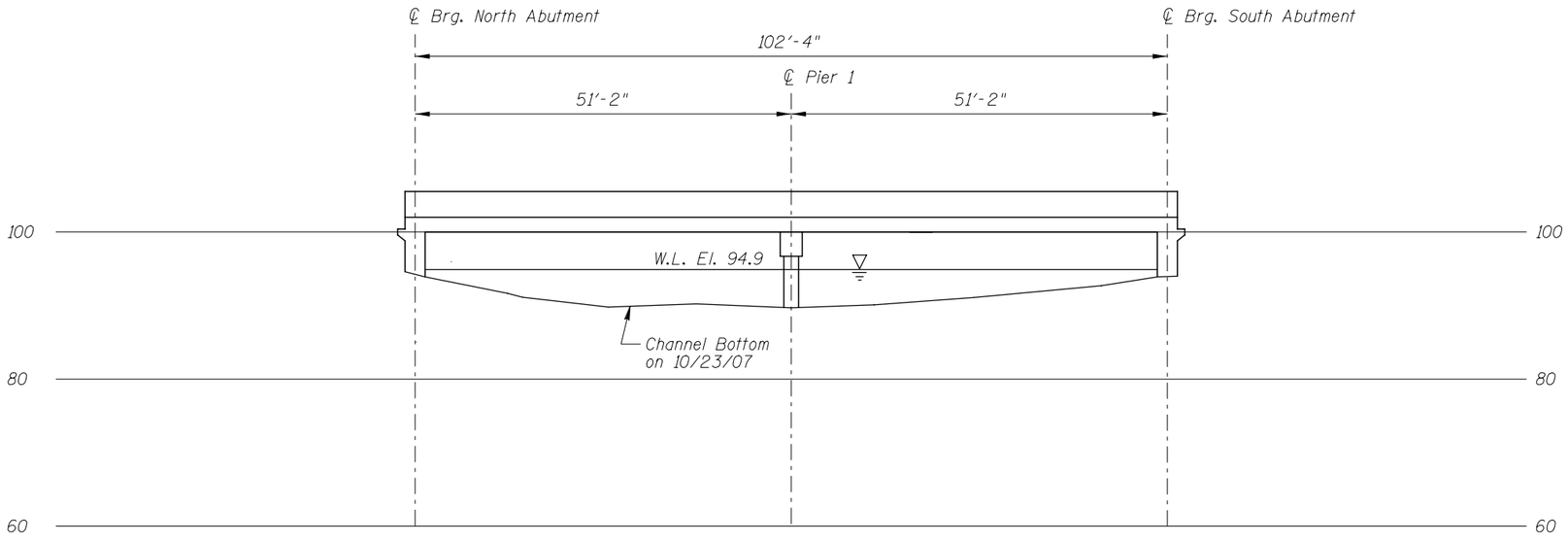
MSAS 125 (HULET AVE.) OVER THE CANNON RIVER
DISTRICT 6, RICE COUNTY

INSPECTION AND SOUNDING PLAN

Drawn By: RR	COLLINS ENGINEERS 123 North Wacker Drive Suite 300 Chicago, IL 60606 (312) 704-9300 www.collinsengr.com	Date: OCT. 2007
Checked By: VR		Scale: NTS
Code: 52216523		Figure No.: 1



UPSTREAM FASCIA PROFILE



DOWNSTREAM FASCIA PROFILE

Note:

Refer to Figure 1 for General Notes.

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UPSTREAM AND DOWNSTREAM
FASCIA PROFILES

Drawn By: RR	COLLINS ENGINEERS 123 North Wacker Drive Suite 300 Chicago, Il. 60606 (312) 704-9300 www.collinsengr.com	Date: OCT. 2007
Checked By: VR		Scale: 1"=20'
Code: 52216523		Figure No.: 2

MINNESOTA DEPARTMENT OF TRANSPORTATION
OFFICE OF BRIDGES AND STRUCTURES
DAILY DIVING REPORT

INSPECTORS: Collins Engineers, Inc. DATE: October 23, 2007
ON-SITE TEAM LEADER: Daniel G. Stromberg, P.E.
BRIDGE NO: 66523 WEATHER: Sunny, ± 56° F
WATERWAY CROSSED: Cannon River
DIVING OPERATION: X SCUBA _____ SURFACE SUPPLIED AIR
_____ OTHER
PERSONNEL: Clayton G. Brookins, Valerie Roustan
EQUIPMENT: Scuba,U/W Light,Scraper, Lead Line, Sounding Pole, Probe Rod, Camera
TIME IN WATER: 11:20 A.M.
TIME OUT OF WATER: 11:50 A.M.
WATERWAY DATA: VELOCITY ±1 f.p.s
VISIBILITY ± 0.5 feet
DEPTH 6.0 feet maximum at Pier 1.
ELEMENTS INSPECTED: North and South Abutments and Pier 1
REMARKS: The concrete was typically in smooth and sound condition with no notable deterioration. A light accumulation of timber debris, consisting of 1-foot-diameter and smaller logs and branches was observed at the upstream end and along the downstream half of Pier 1. The channel bottom appeared to be in stable condition with silty sand allowing up to 2 inches of probe rod penetration surrounding Pier 1 and 2- to 4-foot-diameter riprap along the North and South Abutments. No notable scour was observed at the bridge.

FURTHER ACTION NEEDED: _____ YES X NO

Reinspect the submerged substructure units at the normal maximum recommended (NBIS) interval of five (5) years.

MINNESOTA DEPARTMENT OF TRANSPORTATION
OFFICE OF BRIDGES AND STRUCTURES

UNDERWATER INSPECTION CONDITION RATING FORM

BRIDGE NO. 66523
INSPECTORS Collins Engineers, Inc.
ON-SITE TEAM LEADER Daniel G. Stromberg, P.E. 21491
WATERWAY CROSSED The Cannon River

INSPECTION DATE October 23, 2007

NOTE: USE ALL APPLICABLE CONDITION DEFINITIONS AS DEFINED IN THE MINNESOTA RECORDING AND CODING GUIDE INCLUDING GENERAL, SUBSTRUCTURE, CHANNEL AND PROTECTION, AND CULVERTS AND WALL DEFINITIONS TO COMPLETE THIS FORM.

CONDITION RATING

			SUBSTRUCTURE						CHANNEL					GENERAL					
UNIT REFERENCE NO.	UNIT DESCRIPTION	MAXIMUM DEPTH OF WATER	PILING	COLUMNS, SHAFTS, OR FACES*	FOOTINGS	DISPLACEMENT	OTHER	OVERALL SUBSTRUCTURE CONDITION CODE*	SCOUR	EMBANKMENT EROSION	EMBANKMENT PROTECTION	OTHER (DRIFT/DEBRIS)	OVERALL CHANNEL & PROTECTION CONDITION	CONCRETE	STEEL	TIMBER	LOSS OF SECTION	PREVIOUS REPAIR OR MAINTENANCE	OTHER
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	North Abutment	1.5’	N	7	N	9	N	7	8	N	N	N	8	7	N	N	N	N	N
	Pier 1	6.0’	N	7	N	9	N	7	8	N	N	7	7	7	N	N	N	N	N
	South Abutment	1.0’	N	7	N	9	N	7	8	N	N	N	8	7	N	N	N	N	N

*UNDERWATER PORTION ONLY

REMARKS: The concrete was typically in smooth and sound condition with no notable deterioration. A light accumulation of timber debris, consisting of 1-foot-diameter and smaller logs and branches was observed at the upstream end and along the downstream half of Pier 1. The channel bottom appeared to be in stable condition with silty sand allowing up to 2 inches of probe rod penetration surrounding Pier 1 and 2- to 4-foot-diameter riprap along the North and South Abutments. No notable scour was observed at the bridge.

NOTES: ATTACH SKETCHES AS NEEDED, IDENTIFY REMARK BY REFERRING TO UNIT REFERENCE NO. AND REMARK NO.
USE GENERAL SECTION TO IDENTIFY OVERALL PRESENCE OF SPALLS, CRACKS, CORROSION, ETC.